

## **NOTICE OF ALLOWABILITY**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 31 August 2009 has been entered.

### ***Status of the Claims***

2. This action is in response to papers filed 31 August 2009 in which claims 1 and 18 were amended. This action is further in response to amendments discussed and agreed upon during an interview between the examiner and Ms.Cotton on 3 December 2009. All of the amendments have been thoroughly reviewed and entered.

The amendments place the claims in condition for allowance.

### ***Election/Restrictions***

3. Claims 1-2 and 16-18 are directed to an allowable product. Pursuant to the procedures set forth in MPEP § 821.04(B), claims 4-11, directed to the process of making or using an allowable product, previously withdrawn from consideration as a result of a restriction requirement, are hereby rejoined and fully examined for patentability under 37 CFR 1.104.

Because all claims previously withdrawn from consideration under 37 CFR 1.142 have been rejoined, **the restriction requirement as set forth in the Office action mailed on 27 February 2006 is hereby withdrawn.** In view of the withdrawal of the restriction requirement as to the rejoined inventions, applicant(s) are advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Once the restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no longer applicable. See *In re Ziegler*, 443 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

Claims 1-2, 4-11 and 16-18 are in condition for allowance.

#### **EXAMINER'S AMENDMENT**

4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Abigail Cotton on 3 December 2009.

The application has been amended as follows:

Replace claims 4-11 with the following:

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4. A method for detecting genes by utilizing as a detection means a substrate to the substrate surface of which a plurality of nucleic-acid probes containing single-stranded nucleic acid fragments having a complementary sequence in respect to a target DNA have been immobilized in order that the target DNA contained in a specimen is detected according to hybridization; the method comprising:

providing the heat conduction adaptor of Claim 18;

disposing ~~a heat-conductive material~~ said heat conduction adaptor on the back of the substrate to the substrate surface of which the plurality of single-stranded nucleic acid fragments have been immobilized, and in contact with the back of the substrate;

disposing a heater or a cooler in contact with ~~a heat-conductive material~~ said heat conduction adaptor; and

providing a temperature controller for controlling the amount of heat flowing across the heater or cooler and ~~a heat-conductive material~~ said heat conduction adaptor to control the temperature of the heat-conductive material;

providing a specimen comprising the target DNA to the substrate surface comprising the immobilizing nucleic acid fragments;

performing a hybridization reaction; and

detecting the hybridization, the detection detecting being operated while the substrate standing bonded sandwichedly and the specimen standing in contact with the substrate surface are temperature-controlled through the temperature control of the heat-conductive material by the temperature controller during the operation of gene detection.

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5. The method according to claim 4, wherein, in a plurality of steps involved in the gene detection ~~operation~~, said substrate and said specimen standing in contact with the substrate surface are temperature-controlled; and

the temperature in the plurality of steps requiring temperature control is successively controlled by the temperature controller which utilizes said heater.

6. The method according to claim 4, wherein, in a plurality of steps involved in the gene detection ~~operation~~, said substrate and said specimen standing in contact with the substrate surface are temperature-controlled; and

the temperature in the plurality of steps requiring temperature control is successively controlled by the temperature controller which utilizes said cooler.

7. The method according to claim 4, wherein, as said heat-conductive material, which is utilized for the temperature control the substrate and of the specimen standing in contact with the substrate surface, a heat-conductive material is used which is formed of any one of a metal and a resin or a composite of these two or more.

8. A method for detecting genes by utilizing as a detector a substrate to the substrate surface of which a plurality of nucleic-acid probes containing single-stranded nucleic acid fragments having a complementary sequence in respect to a target DNA have been immobilized in order that the target DNA contained in a specimen is detected according to hybridization; the method comprising:

providing the heat conduction adaptor of Claim 18;

disposing a ~~heat-conductive material~~ said heat conduction adaptor on the surface of the substrate to the substrate surface of which the plurality of single-stranded nucleic

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acid fragments have been immobilized, facing, and in contact with, the substrate surface, partly leaving a space for feeding the specimen thereinto;

disposing a heater or a cooler in contact with ~~a heat-conductive material~~ said heat conduction adaptor; and

providing a temperature controller for controlling the amount of heat flowing across the heating means or cooling means and ~~a heat-conductive material~~ said heat conduction adaptor to control the temperature of the heat-conductive material;

providing a specimen comprising the target DNA to the substrate surface comprising the immobilizing nucleic acid fragments;

performing a hybridization reaction; and

detecting the hybridization, the ~~detection~~ detecting being operated while the specimen fed into the space and the substrate surface, which are in contact with the heat-conductive material, being temperature-controlled through the temperature control of ~~a heat-conductive material~~ said heat conduction adaptor by the temperature controller during the ~~operation~~ of gene detection.

9. The method according to claim 8, wherein, in a plurality of steps involved in the gene detection ~~operation~~, said substrate and said specimen standing in contact with the substrate surface are temperature-controlled; and

the temperature in the plurality of steps requiring temperature control is successively controlled by the temperature controller which utilizes said heater.

10. The method according to claim 8, wherein, in a plurality of steps involved in the gene detection ~~operation~~, said substrate and said specimen standing in contact with the substrate surface are temperature-controlled; and

the temperature in the plurality of steps requiring temperature control is successively controlled by the temperature controller which utilizes said cooler.

11. The method according to claim 8, wherein, as said heat-conductive material, which is utilized for the temperature of the substrate and the specimen standing in contact with the substrate surface, ~~a heat-conductive material~~ said heat conduction adaptor is used which is formed of any one of a metal and a resin or a composite of these two or more.

### **REASONS FOR ALLOWANCE**

5. The following is an examiner's statement of reasons for allowance:

The claims define a heat conduction adaptor having legs for fitting into the microtube holes of a heatblock wherein the adaptor has an upper flat surface for supporting an array and without any recesses. The prior art does not teach a heat conduction adaptor that fits in to a temperature control block as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

6. Claims 1-2, 4-11 and 16-18 are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (571) 272-0741. The examiner can normally be reached on 6:00 TO 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Nguyen can be reached on (571) 272-0731. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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